

# **Elementary Algebra**

## **Instructional Planning**

### **Guide Overview**

The academic standards for the elementary algebra core area establish the process skills and core content for Algebra 1, Mathematics for the Technologies 1, and Mathematics for the Technologies 2, which should provide students with the mathematics skills and conceptual understanding necessary for them to further their mathematical education or to pursue mathematics-related technical careers. These standards will be the basis for the development of the items on the state-required end-of-course examination for Algebra 1 and Mathematics for the Technologies 2.

The content of the elementary algebra standards encompasses the real number system; operations involving exponents, matrices, and algebraic expressions; relations and functions; writing and solving linear equations; graphs and characteristics of linear equations; and quadratic relationships and functions. Teachers, schools, and districts should use the elementary algebra standards to make decisions concerning the structure and content of Algebra 1, Mathematics for the Technologies 1, and Mathematics for the Technologies 2. Content in these three courses may go beyond the elementary algebra standards.

All courses based on the academic standards for elementary algebra must include instruction using the mathematics process standards, allowing students to engage in problem solving, decision making, critical thinking, and applied learning. Educators must determine the extent to which such courses or individual classes may go beyond these standards. Such decisions will involve choices regarding additional content, activities, and learning strategies and will depend on the objectives of the particular courses or individual classes. This curriculum includes sample resources, activities, and assessment items. Individual schools may use these as a framework for planning instruction. Through collaborative planning, teachers are encouraged

to incorporate textbooks, software, publications, and other resources available to them into this framework.

In all courses based on the elementary algebra standards, hand-held graphing calculators are required for instruction and assessment. Students should learn to use a variety of ways to represent data, to use a variety of mathematical tools such as graph paper, and to use technologies such as graphing calculators to solve problems.

**Note:**

The term ***including*** appears in parenthetical statements in the high school mathematics indicators to introduce a list of specifics that are intended to clarify and focus the teaching and learning of the particular concept. That is, within these parenthetical including statements are specified the components of the indicator that are critical for the particular core area with regard both to the state assessments and to the management of time in the classroom. While instruction must focus on the entire indicator, educators must be certain to cover the components specified in the parenthetical *including* statements.

The term ***non-essential*** does not mean that the learning or understanding is non-essential for Elementary Algebra. It means it is non-essential for the particular indicator cited. The learning cited as non-essential may be essential for other indicators in Elementary Algebra.

***Assessment Item Examples*** were included to provide teachers with additional instructional resources.

The Elementary Algebra ***Prioritized Scope and Sequence*** is organized around 45 minute sessions. Individual schools will need to adjust accordingly when planning for class period longer than 45 minutes.